STATE OF ILLINOIS
Department of Purchases and Construction
Division of Waterways

Bulletin No. 10 Chicago, Ill. May 1, 1928

(FIFTH EDITION)

ILLINOIS WATERWAYS

A GUIDE FOR NAVIGATORS

FROM

Lake Michigan to the Mississippi River via the Chicago Sanitary District Canal, the Illinois and Michigan Canal and the Illinois River

ALSO AN

Alternate Route via the

Illinois and Mississippi (Hennepin) Canal

Issued in Accordance with
ACT OF THE GENERAL ASSEMBLY
Approved June 10, 1911

[Printed by authority of the State of Illinois]

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Issued by

STATE OF ILLINOIS

Department of Purchases and Construction

Division of Waterways

LEN SMALL, Governor

LESLIE SMALL, Director

WM. F. MULVIHILL,
Supervisor Illinois Waterway Construction

CHICAGO

220 So. State Street

1928

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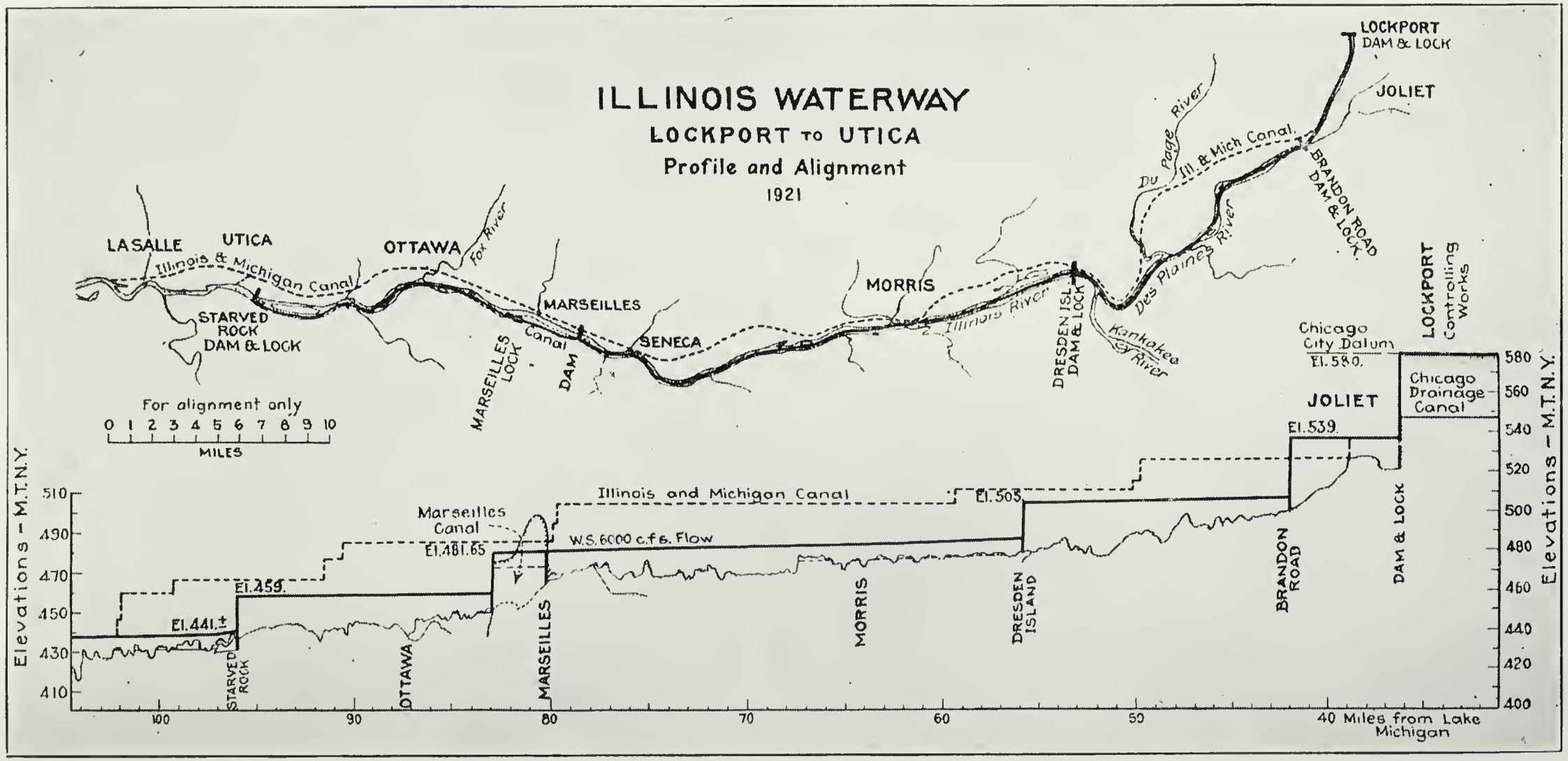

Showing deep waterway now under construction by State of Illinois. Five locks, 110 x 600 feet. With present flow from Lake Michigan, minimum depth in earth will be 9 feet and in rock 11 feet, with 14 feet on miter sills.

PREFACE TO FIFTH EDITION OF THE ILLINOIS WATERWAYS GUIDE

This bulletin has been prepared by the Division of Waterways, Department of Purchases and Construction of the State of Illinois, for the information and guidance of navigators seeking passage by water between Chicago and the Illinois and Mississippi Rivers.

The present limitation in size of boats is controlled by the minimum dimensions of the Illinois and Michigan Canal and its locks.

Upon completion of the larger locks of the Illinois Waterway, now under construction by the State, and the utilization of the improved Desplaines and Illinois Rivers between Lockport and Utica, the size of boats may be materially increased.

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LaGrange Lock and Dam, in the Illinois River. Built and Operated by the U. S. Government

ILLINOIS WATERWAYS

Lake Michigan to the Mississippi River, via Chicago River, Chicago Sanitary District Canal, Illinois and Michigan Canal, and Illinois River, a Distance of 325 Miles.

GENERAL

Lake Michigan.—The elevation of the surface of Lake Michigan is subject to annual and seasonal variations caused by natural supply and evaporation, as well as to sudden changes caused by winds.

The standard elevation used for many years in and about Chicago is called "Chicago City Datum" and is 579.94 feet above mean sea level at New York. "Low Water Datum" is the standard elevation adopted for United States river and harbor improvements and is 579.60 feet above mean sea level at New York.

DESCRIPTION OF ROUTE

CHICAGO HARBOR TO CALUMET HARBOR

Miles	
0.0	Starting at U. S. Light House at east end of North Pier at mouth of Chicago River, continue southerly parallel to lake shore.
1.25	Field Museum at 12th Street and Ericson Drive.
3.05	Douglas Monument at 35th Street.
4.06	Sanitary District pumping station at 39th Street.
5.80	Chicago Beach Hotel at 51st Street.
8.00	South end of Jackson Park at 67th Street.
8.00	Hyde Park Crib and Edw. F. Dunne Crib.
11.6	Calumet Harbor outer light.
12.66	Calumet Harbor inner light at the east end of U. S. North Pier.

Chicago River.—The Chicago River consists of the North and South Branches joining to form the main river at Lake Street, 1.6 miles from its mouth in Lake Michigan. The South Branch has a general north and south course and, until recently, was under improvement by the United States. It is now in use as a part of the Sanitary District system and is maintained by that municipality.

Sanitary District Canal.—The Sanitary District of Chicago has connected the South Branch of Chicago River near Robey Street with the Illinois and Michigan Canal at Joliet by a deep water canal to Lockport Lock where a fall of about 40 feet is accomplished, and by improvement of Des Plaines River thence to Joliet at Lock No. 5 of the Illinois and Michigan Canal.

The canal was designed to carry the sewage of Chicago and vicinity to the Illinois River, by use of water from Lake Michigan. The canal was opened January 2, 1900, thereby reversing

the flow of water in Chicago (main) River and its South Branch with a fall of about 4.5 feet from Lake Michigan to Lockport Lock.

Calumet-Sag Channel.—The Sanitary District has also connected the Little Calumet River just east of Blue Island (14.5 miles from east end of north pier) with the Main Drainage Canal at Sag about 12.4 miles above Lockport Lock.

This Calumet-Sag Channel is 16.2 miles long, with bottom widths of 36 feet in earth section, 60 feet in rock section, and 50 feet normal to channel axis at bridges. Depth is 20 feet. There are lie-bys every 3 miles with depth of 15 feet. Near the upper end of the channel there is a controlling lock, 50 feet in width, 400 feet long and 20 feet deep, with electrically operated gates.

The channel was opened in August, 1922, thereby reversing the current in Calumet and Little Calumet Rivers with a fall of about 3 feet from Lake Michigan to the main canal at Sag.

The channel is crossed by 7 railroad and 17 highway bridges, all fixed, with minimum clearance of 15.7 feet above normal water surface. Normal water surface is computed as being, when Lake Michigan surface is at Chicago City datum, 0.7 feet below that datum at and above the lock, and 3.0 feet below at entrance to main canal. Bridges on the Calumet and Little Calumet Rivers are all movable for passage of boats.

This is primarily a sewage canal, but is available for passage of small vessels to the main channel of the Sanitary Canal via Calumet River. Draft of boats is limited by depths in Little Calumet River, usually about 13 to 14 feet.

CALUMET HARBOR TO MAIN CHANNEL OF CHICAGO SANITARY DISTRICT CANAL VIA CALUMET-SAG CHANNEL

Miles	
0.0	Starting at Calumet Harbor inner light, continue past on the Main Calumet River to
0.71	Elgin, Joliet and Eastern Railway bridge, from which the channel is 200 ft. wide and 21 ft. deep passing under
0.86	Ninety-second Street highway bridge.
1.00	Turning basin No. 1.
1.19	Ninety-fifth Street highway bridge.
1.38	Baltimore & Ohio Ry. bridge.
1.41	New York Central R. R. bridge.
1.43	Pittsburgh, Fort Wayne & Chicago R. R. bridge.
1.82	One Hundredth Street highway bridge.
2.68	One Hundred and Sixth Street highway bridge.
4.00	Turning basin No. 3.
5.24	Calumet Western Ry. bridge, from which the channel is 200 ft. wide and 19 ft. deep.
5.39	Chicago & Western Indiana R. R. bridge.
5.43	Torrence Avenue highway bridge, from which channel is 200 ft. wide and 12 ft. deep.
5.73	New York, Chicago & St. Louis R. R. bridge.
6.18	Turning basin No. 5 at "The Forks"; from this point the channel is 80 ft. wide at bottom and 14 ft. deep.
6.51	Illinois Central R. R. bridge.
7.34	One Hundred Thirty-fourth Street highway bridge.
7.83	"The Junction" of the Grand Cal. and L. Cal. Rivers, continue past on *the Little Calumet River.*

8.10	Torrence Avenue highway bridge passing Forest Preserve on the right.
8.66	Michigan Central R. R. bridge passing Illinois Brick Company on left.
11.31	Chicago & Western Indiana R. R. bridge.
11.57	Indiana Avenue highway bridge passing sugar beet factory on left.
11.77	Illinois Central R. R. bridge passing Acme Steel Company on left.
13.34	Pittsburgh, Cincinnati, Chicago & St. Louis Ry. bridge, passing Forest Preserve on left
13.88	South Halsted Street highway bridge.
14.48	Entrance to sag channel, Sanitary District Canal, which is 16.2 miles long, has a bottom width varying from 36 to 60 feet, and is excavated to a depth of 20 feet below a straight line gradient having elevation of 0.37 feet below low-water datum for Lake Michigan at the Little Calumet River and 2.66 feet below same datum at the Sag. The earth sections, 10.8 miles long, have bottom width of 36 feet and side slopes of 1 on 2, or bottom width of 50 feet and side slopes of 1 on 1. The rock section 5.4 miles long, has a bottom width of 60 feet, with vertical sides.
14.71	Controlling works foot bridge on lock.
14.81	Controlling works highway bridge.
15.18	Ashland Avenue highway bridge.
15.68	Division Street highway bridge.
15.88	Chicago Street highway bridge.
16.03	Gregory Street highway bridge.
16.18	Chicago, Rock Island & Pacific Ry. bridge.
16.28	Western Avenue highway bridge.
16.38	Ann Street (Blue Island) highway bridge.
16.55	Baltimore & Ohio Chicago Terminal R. R. bridge.
16.58	Grand Trunk Western Ry. bridge.
16.59	Chicago Rock Island & Pacific R. R. bridge.
16.83	Francisco Avenue highway bridge.
17.18	Kedzie Avenue highway bridge.
17.48	Homan Avenue Highway bridge.
19.28	Forty-eighth Avenue highway bridge.
19.98	Burr Oak Avenue highway bridge.
21.71	Piper Road highway bridge.
22.88	Worth Road highway bridge.
23.47	Wabash R. R. (near Worth) bridge.
24.53	West Eighty-second Street highway bridge.
25.31	MacLaughey Road highway bridge.
26.81	Bash Road highway bridge.
29.86	Archer Road highway bridge.
30.24	Chicago & Joliet Electric R. R. bridge.
30.26	Chicago & Alton R. R. bridge.
30.50	Illinois & Michigan Canal.
30.68	Chicago Main Drainage Canal.

Illinois and Michigan Canal.—The Illinois and Michigan Canal was constructed by the State of Illinois assisted financially by donation of lands from the United States. It was opened for traffic in 1848, connecting the Chicago River at Ashland Avenue with Illinois River just below LaSalle by the use of 15 locks. Since the opening of the Sanitary District Canal from Chicago to Joliet, that portion of the Illinois and Michigan Canal is not used for navigation. The remaining portion, about 64 miles, from Joliet to LaSalle with 11 locks, continues to be available for small craft.

Illinois Waterway.—The State of Illinois is now constructing a Deep Waterway with a series of 5 locks and 4 dams, at a cost of $20,000,000, to connect the main channel of the Sanitary District Canal at Lockport with the navigable water of the Illinois River at Utica, a distance of about 61 miles. The locks will be 110 feet in width and 600 feet in usable length. With the present flow from Lake Michigan, the minimum depth in earth will be 9 feet and in rock 11 feet, with 14 feet on miter sills.

The small Sanitary District lock at Lockport is supplemented by the larger lock with a maximum lift of 41 feet. This lock and the lock and dam at Marseilles are practically completed. Those at Brandon Road and Starved Rock are under contract, and those at Dresden Heights are ready for contract. Total lift by these locks will be 126 feet, and the difference in level between the upper pool at Lockport and the Illinois River at LaSalle will be about 138 feet.

Upon the completion of these works boats of large dimensions and capacity navigating the Mississippi River system may make direct connection with Lake Michigan at Chicago.

Illinois River.—The Illinois River from LaSalle to its mouth near Grafton, about 223 miles, has been for many years under improvement by the United States with a view to obtaining a navigable depth of 7 feet. At present, that depth is at least 6½ feet.

Under ordinary conditions the current is sluggish, the fall from LaSalle to the mouth at low water being 0.15 feet to the mile. The fluctuation from low water to flood stage is upward of 14 feet.

There are four sets of locks and dams, two formerly owned and operated by the State at Henry and Copperas Creek, and two owned and operated by the United States at LaGrange and Kampsville, situated, respectively, 28, 87, 147 and 193 miles below LaSalle. Each lock is 350 feet long and 75 feet wide with low water depth of 7 feet on miter sills.

The river and harbor bill passed by the 69th Congress, approved January 1, 1927, modifies the existing project so as to provide a channel of least dimensions of 9 feet depth and 200 feet width from mouth of river to Utica; provided, among other conditions, that the two State owned locks and dams at Henry and Copperas Creek with necessary appurtenant lands be transferred to the United States. This transfer was completed in 1928.

Water Craft and Terminals.—The character of water craft suitable for use on the Illinois Waterway and Mississippi River system is receiving considerable attention from engineers and transportation experts.

It seems to be the general theory that for bulk commodities, to be transported long distances, the larger the carrying capacity of the craft the better; but shipments in quantities less than full barge lots is worthy of consideration.

The present standard steel cargo barge of the Federal Gov-

ernment, used in the Mississippi River service, is 230 feet long and 45 feet beam dimensions over all, with a carrying capacity of 2,000 tons each, equal to more than 70 carloads. When loaded to full capacity and to be unloaded at the same destination, this is proving very satisfactory, but for less than barge lots, where delivery has to be made at different ports, the cost due to delay of an entire tow suggests the idea that barges of less capacity that could be detached from the tow and after being unloaded and reloaded could be picked up by the next tow, might be advantageous.

Standard steel barges upon the upper Ohio and the Monongahela River are 26 feet wide by 175 feet in length, carrying about 775 tons each when loaded to a draft of 7 feet 4 inches, which is about the maximum economical draft for a channel depth of 9 feet. For many purposes barges of this size are desirable when united in fleets, but when being handled light as single units they are said to be somewhat topheavy.

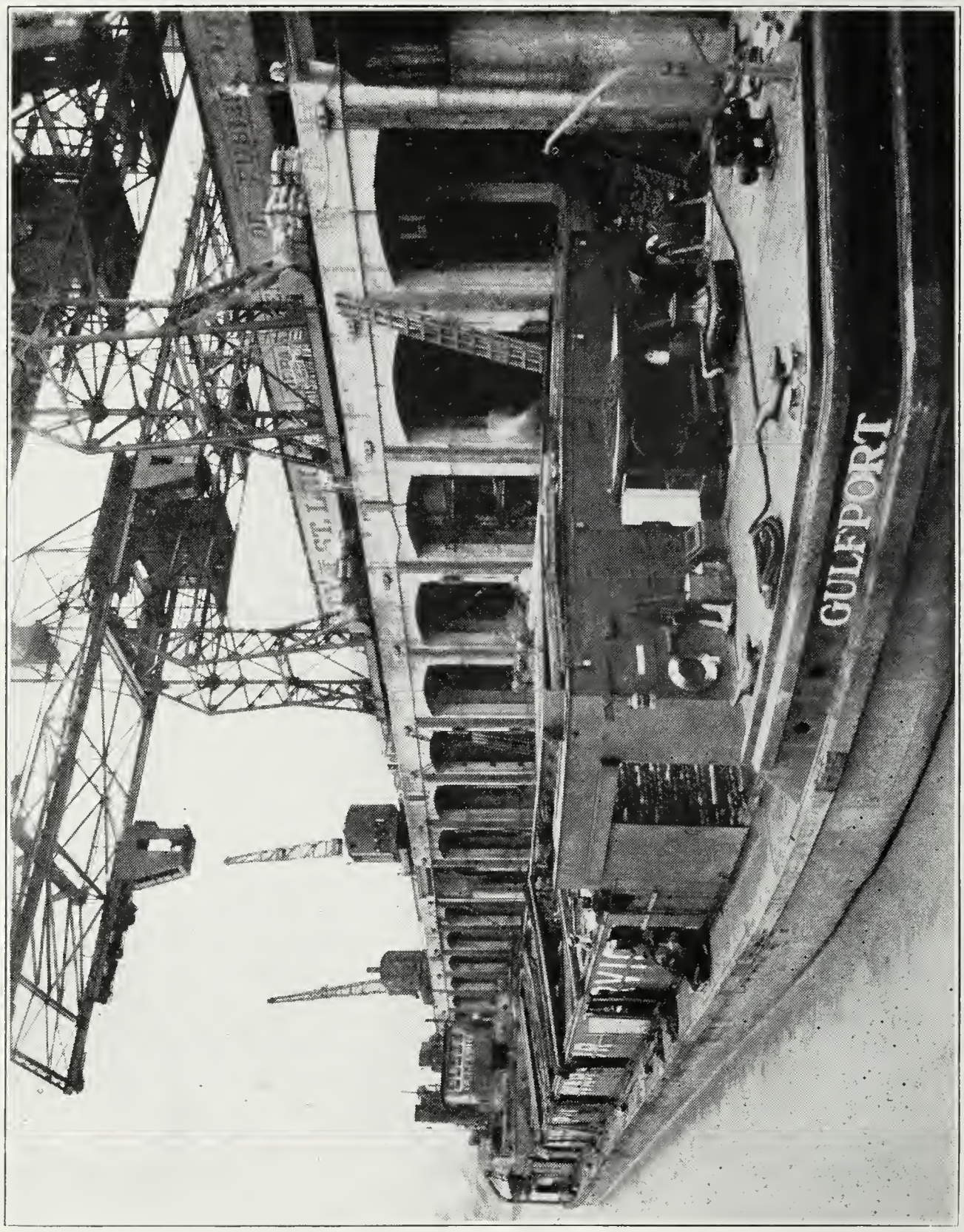
These barges 26 feet wide and 175 feet long, when used in tows on the Illinois Waterway, should prove very satisfactory. Ten such barges and a towboat could pass through one of the standard locks of the Illinois Waterway at a single lockage with a minimum use of water for lockage purposes. Four barges abreast would require a width of 104 feet, three barges in length with a power boat partially sandwiched between two barges, would fit snugly into the lock chambers, which are 110 feet wide by 600 feet long. Thus about 8,000 tons of freight would be handled at a single lockage without breaking up the tow.

Another advantage of this width of barge used on the Illinois Waterway is that the distribution in the Chicago District would permit the two-way passage of such barges in tandem formation through the Calumet Sag Channel which is but 60 feet wide narrowed to 50 feet at lock and normal to channel axis at bridges, and which otherwise would have to be used for partial one way traffic, since wider barges and the standard barges of the Mississippi service could not pass each other except at lie-bys.

The subject of proper terminals is of increasing importance and is demanding the attention of private interests and public officials of the cities located on the navigable waters of the Middle West and studies are being made by various municipalities with a view to determining the type of terminals to suit best their respective conditions and requirements.

Chicago will be the most important port of the Illinois Waterway and will require a vast amount of terminal and harbor improvement to care for the barge tonnage which is expected to develop.

While the tonnage of the Chicago Harbor, which includes only the Chicago River and its connecting channels, has fallen off during the past fifteen years, due to a lack of terminal facilities, the tonnage of the Chicago Terminal District has shown a greater rate of increase than any other harbor on the Great Lakes.



Type of self-propelled fast boat of the Federal Barge Line on the Mississippi River, at the St. Louis Municipal Wharf.

DETAIL DESCRIPTION OF PRINCIPAL ROUTES

Chicago River

The distance from Lake Michigan at the mouth of Chicago River (east end of north pier) to the entrance of the Chicago Sanitary District Canal near Robey Street is 6.2 miles. The river has a least width of 200 feet, except for a short distance between Adams and Harrison Streets where the channel is constricted, and this portion will be widened eventually. The City of Chicago is constructing a new and more direct channel from Polk Street to 18th Street, which will shorten the distance by about 0.1 miles. The depth of the channel is 19 to 26 feet. Bridges have a clear height above low water datum of at least 16 feet except the Chicago Terminal Railroad and Pennsylvania Railroad bridges which have a clearance of 5.6 feet and 9.3 feet respectively.

Description of the course with mileage from Lake Michigan:

Miles	
0.0	U. S. Lighthouse, East end of North Pier, Chicago.
0.84	Michigan Avenue bridge, bascule, double deck.
1.07	State Street bridge, bascule.
1.15	Dearborn Street bridge, bascule.
1.23	Clark Street bridge, swing, on center pier.
1.30	LaSalle Street bridge, bascule (under construction).
1.35	Wells Street bridge, bascule, double deck.
1.43	Franklin-Orleans bridge, bascule.
1.58	Junction, north and south branches. Turn left on south branch.
1.62	Lake Street bridge, bascule, double deck. Highway bridges, bascule, at Randolph, Washington, Madison, Monroe, Adams, Jackson Streets, to
2.18	Metropolitan Elevated Ry. bridge, high clearance. Highway bridges, bascule, at Van Buren, Harrison, Polk, Taylor Streets, to
2.81	B. & O. Chicago Terminal R. R. bridge, bascule, low clearance.
2.91	Roosevelt Road (Twelfth Street) bridge, bascule.
3.46	St. Charles Air Line bridge, bascule.
3.68	Eighteenth Street bridge, bascule.
3.86	Pittsburgh, Fort Wayne & Chicago R. R. bridge, vertical lift, low clearance.
3.96	Canal Street bridge, bascule.
4.13	Twenty-second Street bridge, bascule.
4.56	Halsted Street bridge, vertical lift, low clearance.
5.17	Throop Street bridge, bascule.
5.40	Loomis Street bridge, bascule.
5.53	Turning basin. Keep to right, avoiding south fork.
5.66	Ashland Avenue bridge, bascule. Keep to left, avoiding west fork.
6.22	Entrance to Chicago Sanitary District Canal.

Chicago Sanitary District Canal

The length of the main canal from Robey Street in Chicago to the Lockport Lock is 30 miles. Minimum width 160 feet, contracted to 97 feet in bridge openings normal to channel axis, minimum depth 22 feet.

From the Lockport Lock to Lock No. 5 of the Illinois and Michigan Canal at Joliet, a distance of 2.5 miles, the Desplaines River has been improved by the Sanitary District and has a minimum depth of 10 feet.

The Lockport Lock has a width of 22 feet, usable length of 130 feet and maximum lift of 40 feet. There is no charge for lockage.

The State is providing a lock 110 feet wide, 600 feet long, with maximum lift of 43 feet, immediately adjacent to and east of the smaller lock.

Bridges have a clear height above normal water surface of at least 16 feet, except the drawbridges at 9th Street and 16th Street in Lockport, which have a clearance when closed of 6.8 feet and 6.9 feet respectively. The Butterfly Dam just above 9th Street bridge is pivoted in mid-channel and remains open for passage of boats on either side.

The normal water surface is assumed by the Sanitary District as being, with the Lake Michigan water surface at Chicago City Datum, 0.9 feet below at Western Avenue, 2.4 feet below at Willow Springs, 4.5 feet below at Lockport Lock Upper Pool, 40 feet below at Lockport Lock Lower Pool, 42.4 feet below at crest of dam at Lock No. 5 Illinois and Michigan Canal.

Description of the course with mileage from Lake Michigan:

Miles	
6.22	Entrance to Sanitary District Canal near Robey Street.
6.81	Western Avenue bridge, swing, San. Dist. Electric Sub-station on left, International Harvester Works on right.
6.93	8-track railway bridge (B. & O. Chic. Term. Rwy., P. C. C. & St. L. Rwy.) bascule, "Bridewell" city prison, on far right.
7.35	California Avenue bridge, bascule.
7.76	Ill. Cent. Rwy. bridge, swing.
7.90	Kedzie Avenue bridge, swing.
8.44	A. T. & S. F. Ry. bridge, swing.
8.99	Crawford Avenue bridge, bascule (under construction).
9.80	C. & W. I. R. R. bridge, swing, use left opening.
10.07	Cicero Avenue bridge, bascule.
12.55	A. T. & S. F. Ry. bridge, swing.
14.17	Summit-Lyons Road bridge, swing.
15.14	B. & O. Chicago Terminal bridge, swing, Corn Products Co. at Argo on left.
19.54	Willow Springs road bridge, bob-tail swing. Rock cut begins.
23.93	Sag Channel enters on left.
26.85	A. T. & S. F. Ry. bridge, bob-tail swing.
26.90	Lemont Road bridge, bob-tail swing.
31.28	Romeo Road bridge, bob-tail swing.
34.31	Lockport—Controlling Works, Bear-trap dam, Stoney Sluice-gates on right.
34.35	Butterfly dam and bridge in mid-channel, remains open.

24.67 Lockport—9th Street bridge, bob-tail swing, low clearance.
35.31 Lockport—16th Street bridge, bob-tail swing, low clearance.
36.32 Lockport Lock, operated by Sanitary District of Chicago throughout the year. Dam and water power plant on right.
37.36 E. J. & E. Ry. bridge over DesPlaines River, fixed. Use middle opening.
Warning. Keep middle of channel, through dangerous curve with swift current, to
38.66 Joliet-Ruby Street bridge, fixed. Use right opening. Keep close to right bank, to
39.00 Lock No. 5, Illinois and Michigan Canal, at west end of dam. Power-house, Public Service Company of Northern Illinois on left.

Illinois and Michigan Canal

The portion of this canal between Joliet and LaSalle which is now in use is about 64 miles long, has 11 locks with lifts varying between 4 and 13½ feet, and is available for craft not exceeding 3½ feet draft. Before attempting its passage with boats exceeding this draft by one foot or less the Division of Waterways or the canal office at 8th and State Streets, Lockport, should be consulted.

The locks and fixed bridges limit the size of boats to the following maximum dimensions: length 98 to 102 feet depending on model; beam, 16 feet at water line, 14½ feet at 4½ foot depth; draft, 4½ feet over lock sills; height above water line 11 feet.

Rates of registration, toll, lockage, etc., are given in Appendix A.

Description of the course with mileage from Lake Michigan:

Miles
39.0 Joliet—Lock No. 5, lift 9 feet. Collector's office.
39.0 Joliet—Jackson Street bridge at lock.
39.3 Joliet—Cass Street bridge.
39.4 Joliet—Jefferson Street bridge.
39.8 Joliet—C. R. I. & P. Ry. bridge, clearance above water 11 feet.
40.1 Joliet—McDonough Street bridge.
41.3 Joliet—Brandon Road bridge.
41.6 Rockdale, plant of American Steel and Wire Company on right.
43.3 C. R. I. & P. Ry. swing bridge, Flathead Mound on left.
44.5 Five mile highway bridge.
45.5 Rock Run and park on right.
46.9 Bird's highway bridge.
47.7 DuPage feeder on right.
48.3 Minooka Widewater.
49.9 Channahon—Knowlton highway bridge, Knapp Street.
50.6 Channahon—Lock No. 6, lift 12 feet.
50.6 Channahon—DuPage River crossing.
50.8 Channahon—Lock No. 7, lift 4 feet 6 inches.
50.9 Channahon—Bridge Street bridge.
54.7 Dresden Heights. Junction of the DesPlaines and Kankakee Rivers forming the Illinois River, visible over left bank.
55.8 Dresden Catholic Cemetery on right.
56.6 Dresden—Highway bridge.
57.1 Elgin, Joliet & Eastern Rwy. bridge.
58.9 Aqueduct over Aux Sable River.
59.0 Lock No. 8, lift 6 feet 2 inches.
59.1 Aux Sable Highway bridge.

63.4	Morris—"Peacock" Highway bridge.
63.7	Morris—C. R. I. & P. Ry. bridge.
64.8	Morris—C. R. I. & P. Ry. bridge.
64.9	Morris—Calhoun Street bridge.
65.2	Aqueduct over Nettle Creek.
66.9	Mt. Carmel Cemetery on right.
67.3	Hoge Highway bridge.
69.9	"Five Mile" Highway bridge, half way to Seneca.
74.5	Seneca—C. C. C. & St. L. Rwy., swing-bridge.
75.1	Seneca—Main Street lift-bridge.
78.6	Marseilles—Illinois Valley Traction Ry. bridge.
79.8	Marseilles—Lock No. 9, lift 10 feet.
79.9	Marseilles—Chicago Street bridge.
80.0	Marseilles—Lock No. 10, lift 10 feet.
80.5	Marseilles—Main Street bascule-bridge.
80.7	Marseilles—Manufacturing Company Railroad, swing-bridge.
80.8	Illinois Valley Traction Ry. swing-bridge.
81.3	Matchtown foot-bridge.
86.1	"White" Highway bridge.
86.3	Chicago Retort & Fire Brick Company foot-bridge.
86.9	Aqueduct over Fox River.
87.6	Ottawa—Columbus Street swing-bridge. Canal collector's office on left bank.
87.7	Ottawa—LaSalle Street, swing-bridge.
87.9	Ottawa—C. B. & Q. R. R., swing-bridge.
90.0	Ottawa—Chestnut Street, swing-bridge.
88.8	Ottawa—Bridge Street bridge.
89.3	Lock No. 11, lift 10 feet.
89.4	C. R. I. & P. Ry. bridge.
90.9	Lock No. 12, lift 9 feet 8 inches.
91.0	Twin Bluff Highway bridge. LaSalle County Poor Farm in the far left.
91.4	"Moriarity" Highway bridge.
91.5	Head of "Buffalo Rock" to the left.
92.1	Buffalo Rock Widewater.
97.0	Utica—Main Street, bridge.
97.2	Utica—C. R. I. & P. Ry. bridge (switch).
99.1	Lock No. 13, lift 7 feet.
99.4	Illinois Valley Traction Ry. bridge.
101.0	LaSalle Aqueduct over Little Vermilion River.
101.1	LaSalle—Illinois Central Rwy., high bridge.
101.2	LaSalle—LaSalle County Carbon Coal Company, high bridge.
101.6	Lock No. 14, lift 13 feet 6 inches.
101.6	LaSalle—Marquette Street bridge (concrete).
101.7	LaSalle—C. B. & Q. R. R. bridge.
101.7	LaSalle—Lock No. 15, lift 6 feet.
102.6	End of Illinois and Michigan Canal at Illinois River.

Notes: Upon completion and use of the Illinois Waterway the total distance between Lock No. 5 at Joliet and the Illinois River at points given in the above table will be increased by about 1.8 miles.

For side trip to Starved Rock State Park see page 20.

Illinois River

From the end of Illinois and Michigan Canal below LaSalle to the mouth of the Illinois River near Grafton 40 miles above Eads Bridge at St. Louis, is about 223 miles.

The locks at *Henry and Copperas Creek* were constructed and operated by the State until 1928, during which year they were transferred to the United States. Lockage charges were as shown

in Appendix A but there will be no charge for lockages under Federal operation.

The locks at *LaGrange and Kampsville* were constructed and are operated by the United States, with no charges for lockage. Each lock is 350 feet long and 75 feet wide with a minimum of 7 feet depth of water.

At each of the four locks there is a submerged dam, over which vessels can pass except at low stages of water. Removal of these dams, wholly or in part, is under consideration.

Attention is called to the Government laws and regulations regarding equipment of motor boats on navigable waters of the United States, as published by the Department of Commerce in Circular No. 236 (see Appendix B). Copies of this circular as amended from time to time may be obtained free of charge from offices of the Steamboat Inspection Service.

The lighthouse aids to navigation are published in pamphlet form from time to time by the Department of Commerce (entitled "Light List, Upper Mississippi River, Thirteenth District") and copies may be obtained from Superintendent of Lighthouses, Rock Island, Ill. Necessary corrections may be obtained from the U. S. Engineer Office, Peoria, Ill.

Description of the course with mileage from Lake Michigan:

Miles	
102.6	Lower end of I. & M. Canal at Illinois River, 0.9 miles below Lock 15 at LaSalle.
103.3	Peru, Highway drawbridge.
107.4	Spring Valley—Highway drawbridge.
107.8	Spring Valley landing, right.
110.6	Marquette landing and coal chute, right.
111.9	Marquette—New York Central R. R. drawbridge.
115.0	De Pue Lake, entrance, right.
115.6	Illinois & Mississippi (Hennepin) Canal, entrance, right.
116.8	Bureau Creek, mouth, right.
117.7	Hennepin Island, head, use right channel.
118.4	Hennepin landing, left.
122.1	Twin Sister Islands, head, use right channel.
127.2	Mud Lake, entrance, right.
129.7	HENRY lock and dam.
129.8	Henry—Highway drawbridge.
130.0	Henry landing, right.
131.4	Upper Henry Island, head, use left channel.
136.7	Lacon—Highway drawbridge, pontoon.
143.9	Chillicothe—Atchison, Topeka & Santa Fe Rwy. drawbridge, use left opening.
145.4	Chillicothe landing, right.
148.0	Rome landing, right.
151.8	Spring Bay landing, left.
159.7	Peoria—Upper Highway drawbridge.
161.6	Peoria—U. S. Boat Yard, Water Works Point.
163.2	Peoria landing.
163.4	Peoria—Bridge Street, bascule bridge.
163.4	Peoria—Toledo, Peoria & Western R. R. drawbridge, use left opening.
163.5	Peoria—Illinois Valley Traction Ry. bascule bridge.
165.2	Peoria—Peoria & Pekin Union Rwy. bascule bridge.
166.2	Kickapoo Creek, mouth, right.

172.7 Pekin—Peoria & Pekin Union Rwy., *bridge piers only.*
172.8 Pekin—Peoria Railway Terminal Co. drawbridge, use right opening.
172.9 Pekin—Highway drawbridge, use left opening.
173.1 Pekin landing, right.
174.6 Pekin—Chicago & Northwestern Rwy. bascule bridge.
175.0 Mackinaw River, mouth, left.
180.3 Kingston landing, right.
184.0 Spring Lake Canal, mouth, left.
187.9 Copperas Creek landing, right.
189.0 COPPERAS CREEK lock and dam.
191.8 Spring Lake slough, mouth, left.
195.8 Clear Lake and Mud Lake, entrances, left.
197.8 Liverpool landing, right.
198.6 Grass Lake slough, entrance, right.
200.0 Thompson Lake slough, entrance, right.
203.5 Quiver Lake and Dog Fish Lake, entrance, right.
204.6 Flagg Lake, entrance, right.
205.2 Spoon River, mouth, right.
205.5 Havana—Chicago, Peoria & St. Louis R. R. bridge, *west pier only.*
205.6 Havana landing, left.
205.8 Havana—Highway drawbridge.
206.2 Havana—Illinois Central Rwy. Bridge, *west pier only.*
211.5 Matanzas Bay, entrance, left.
212.5 Grand Island, head, use right channel.
214.0 Otter Creek, mouth, right.
216.5 Anderson Lake Slough, mouth, right.
217.6 Holmes Landing and Warehouse, right.
219.0 Grand Island, foot.
223.1 Sharp Landing and Warehouse, right.
225.2 Hickory Island, head, use right channel.
226.8 Long Lake, entrance, right.
227.0 Hickory Island, foot.
227.2 Elm Island, head, use left channel.
227.8 Sangamon River, mouth, left.
228.2 Browning Landing and Warehouse, right.
230.6 Sugar Creek Island, head, use right channel.
231.2 Sugar Creek Island, foot.
231.5 Sangamon Lake, entrance, left
232.3 Big Lake, entrance, right.
234.2 Frederick Landing, right.
236.7 Muscooten Bay, entrance, left.
237.0 Beardstown—Chicago, Burlington & Quincy R. R. drawbridge.
237.2 Beardstown—Highway drawbridge.
237.3 Beardstown Landing, left. Follow right bank.
240.2 Coal Creek Island, head, use left channel.
240.9 Coal Creek Island, foot, Coal Creek mouth, right.
241.9 Crane Creek, mouth, right.
242.1 Crooked Creek, mouth, right.
242.6 Reich Landing, left.
245.5 La Grange landing, right.
247.0 Perkins Lake, entrance, right.
248.2 LA GRANGE lock and dam.
249.5 Moore Island, head, use left channel.
250.1 Long Lake, entrance, right.
250.6 Kamp Creek, mouth, right.
251.6 Kamp Creek, south mouth, right.
254.4 Meredosia Lake, entrance, left. Ferry.
254.5 Meredosia Landing, left.
254.7 Meredosia—Highway and Wabash R. R. drawbridge. Left draw not available at low water.
256.3 Meredosia Island, head, use right channel.
257.1 Meredosia Island, foot.

258.7	McGee Island, head, use right channel.
259.2	McGee Island, foot.
260.2	Naples Landing, left.
264.2	Valley City—Wabash R. R. drawbridge.
264.8	Valley City—Griggsville Landing, warehouse, church, right.
266.8	Big Blue Island, head, use right channel.
268.3	Big Blue Island, foot.
269.7	Harris Landing, elevator, left.
270.2	Florence Landing, right.
	Florence—Lift-span Highway Bridge authorized by U. S.
275.6	Montezuma Landing, right. Ferry.
276.2	McEver Island, head, use right channel.
277.1	Bedford Landing, right.
277.4	McEver Island, foot.
279.4	Buckhorn Landing, right.
279.4	Buckhorn Island, head, use right channel.
279.8	Buckhorn Island, foot.
282.7	Pearl—Highway and Chicago & Alton R. R. drawbridge.
282.8	Pearl—Ferry.
283.9	Pearl Landing.
285.7	Wing Island, head, use left channel.
287.1	Fisher Island, head, use right channel.
287.8	Twin Island, use right channel.
288.2	Gravel Point Landing, right.
289.4	Apple Creek Slough, mouth, left.
289.6	Retzger Landing, Warehouse, right.
291.7	Kamp Landing, Warehouse, right.
292.9	Kampsville Ferry.
293.8	Columbiana Slough, mouth, left.
293.8	Kampsville Landing, right.
294.3	KAMPSVILLE lock and dam.
295.0	Willow Island, head, use right channel.
295.2	Crawford Creek, mouth, right.
295.7	Willow Island, foot.
296.5	Crater Landing, right.
297.4	Hurricane Island, head, use left channel.
299.4	Keach Landing, left.
299.9	Hurricane Island, foot.
300.3	Diamond Island, head, use right channel.
301.4	Godar Landing.
303.0	Diamond Island, foot. Miller Slough and Macoupin Slough enter east of Island.
304.6	Hardin Landing.
305.1	Harper Landing.
306.1	Mortland Island, head, use left channel.
307.2	Macoupin Creek, mouth, left.
307.8	Mortland Island, foot.
308.6	Squire Landing, right.
309.7	McDonald Landing, right.
310.8	Nevelin Landing, left, Ferry just above.
311.0	Otter Creek landing, and Creek, left.
311.7	Twelve-mile Island, head, use right channel.
312.2	Hadley Landing, right.
313.4	Twelve-mile Island, foot, Ferry.
313.4	Coon Creek Landing, and Creek, left.
315.3	Grueter Landing, right.
316.5	Bloom Landing, right.
317.3	Six-mile Island, head, use left channel.
318.5	Six-mile Island, foot.
319.0	Carson Landing, left.
320.6	Cherokee Point, left.
321.4	Marshall Landing, right.
322.5	Deer Plain Ferry.
325.8	Grafton, U. S. Gage, on left bank of Mississippi River.

Side trip to **Starved Rock State Park.**

Description of the course with local mileage:

Miles	
0.0	Lower end of Illinois and Michigan Canal at Illinois River 0.9 mile below LaSalle. Turn upstream on Illinois River.
1.4	Highway bridge.
2.2	C. B. & Q. R. R. bridge.
2.3	Ill. Cent. Rwy. bridge.
3.2	Vermilion River on right.
6.4	Utica Highway bridge.
6.7	Take right fork around island to
7.5	Starved Rock Landing, State Park.

Illinois and Mississippi (Hennepin) Canal

(Alternate Route, Ill. Riv. to Miss. Riv. at Rock Island, Ill.)

This canal was constructed by the United States and is 75 miles long, from Illinois River (14 miles below LaSalle) to Mississippi River at Rock Island, Illinois. The canal feeder, from Rock River at Sterling, Illinois, to its junction with the canal is 29 miles long.

Normal dimensions of canal and feeder are 80 feet width at water surface, and 7 feet depth. Increased width is provided in a number of places where the canal is in embankment.

There are 34 locks with lifts of 6 to 12 feet, including a lock giving access to the town of Sterling. Each lock is 35 feet wide with usable length of 143 feet for full width and 156.1 feet for half width, and 7 feet depth. At low water the summit level is 196 feet above Illinois River and 93 feet above Mississippi River.

Bridges on the Main Canal and for 8 miles on the lower end of the feeder have 17 feet clearance above water surface; elsewhere on the feeder 12 feet. Telephone wires, etc., have clearance of 27 feet on main canal and 22 feet on feeder.

There are no tolls or lock charges.

Navigation is subject to special Rules and Regulations issued by the Secretary of War (see Appendix C) and copies may be obtained from the United States Engineer Office at Rock Island, Illinois. Maps of the canal may also be obtained at 10 cents each.

Description of the course with local mileage:

Miles	
0.0	Entrance from Illinois River, 115.6 miles from Lake Michigan at Chicago.
0.3	Lock No. 1, lift 9.4 feet.
1.3	Lock No. 2, lift 9 feet. Pontoon bridge at upper end of lock. Bureau.
1.6	C. R. I. & P. Railway bridge.
1.8	Highway bridge No. 1.
1.9	Lock No. 3, lift 9 feet.
3.5	Lock No. 4, lift 9 feet. Aqueduct No. 1, Bureau Creek.
4.3	Highway bridge No. 2.
4.6	Lock No. 5, lift 8 feet.
6.2	Highway bridge No. 3.
6.4	C. R. I. & P. Railway bridge.
6.4	Lock No. 6, lift 10 feet.
7.2	Lock No. 7, lift 8 feet.

Miles	
7.5	Highway bridge No. 4.
8.2	Lock No. 8, lift 8 feet.
8.4	Lock No. 9, lift 8 feet.
9.2	Highway bridge No. 5.
10.2	Lock No. 10, lift 9 feet.
11.0	Highway bridge No. 6.
11.0	Lock No. 11, lift 9 feet.
11.7	Lock No. 12, lift 8 feet. Aqueduct No. 2, Big Bureau Creek.
12.4	Lock No. 13, lift 10 feet.
12.6	Highway bridge No. 7.
13.1	Highway bridge No. 8.
13.2	Lock No. 14, lift 10 feet.
13.8	Lock No. 15, lift 10 feet.
14.0	Lock No. 16, lift 11 feet.
14.2	Lock No. 17, lift 10 feet.
14.3	Highway bridge No. 9.
15.0	Aqueduct No. 3. W. Bureau Creek.
15.3	Lock No. 18, lift 9 feet.
16.0	Highway bridge No. 10.
16.1	Lock No. 19, lift 10 feet. Wyanet.
16.7	C. B. & Q. Railroad bridge.
17.1	Lock No. 20, lift 11 feet.
17.4	Lock No. 21, lift 11 feet. Small farm lift-bridge. Summit level from here to Lock No. 22.
17.9	Highway bridge No. 11.
18.5	Highway bridge No. 12.
19.0	Highway bridge No. 13.
21.4	Highway bridge No. 14.
22.2	C. & N. W. Railway bridge.
23.0	Emergency gates.
23.0	Highway bridge No. 15.
25.1	Highway bridge No. 16.
26.0	Highway bridge No. 17.
27.0	Highway bridge No. 18.
27.8	Highway bridge No. 17a.
27.9	Feeder Junction on the right, 29 miles to the Rock River at Sterling.
28.3	Highway bridge 18a.
28.9	Lock No. 22, lift 9 feet. Highway bridge 19. End of Summit-level.
30.5	Aqueduct No. 4. Kink River.
30.8	Highway bridge No. 20.
31.6	Highway bridge No. 21.
33.1	Highway bridge No. 22.
34.6	Highway bridge No. 23.
35.2	Aqueduct No. 5. Mud Creek.
36.5	Highway bridge No. 24.
37.4	Highway bridge No. 25.
37.9	Highway bridge No. 26.
38.0	Lock No. 23, lift 11 feet.
38.5	Highway bridge No. 27.
39.6	Highway bridge No. 28.
40.7	Highway bridge No. 29.
41.5	Highway bridge No. 30.
42.8	Highway bridge No. 31.
43.3	Highway bridge No. 32.
43.5	Aqueduct No. 6, Spring Creek.
43.7	Highway bridge No. 33.
45.7	Highway bridge No. 34.
47.0	Highway bridge No. 35.
48.1	Lock No. 24, lift 11 feet.
48.1	Highway bridge No. 36.

Miles	
49.2	Highway bridge No. 37.
50.3	Aqueduct No. 7. Geneseo Creek.
51.5	Highway bridge No. 38.
52.6	Highway bridge No. 39.
53.6	Lock No. 25, lift 8 feet.
54.7	Lock No. 26, lift 9 feet.
54.7	Highway bridge No. 40.
56.9	Lock No. 27, lift 8 feet, Aqueduct No. 8, Green River.
58.1	Highway bridge No. 41.
59.5	Lock No. 28, lift 8 feet. Colona.
59.5	C. R. I. & P. Railway bridge.
59.7	C. B. & Q. Railroad bridge.
60.1	Highway bridge No. 42.
61.8	Lock No. 29, lift 11 feet.
61.8	Entrance to Rock River.
68.0	Moline Highway bridge.
70.6	Lock No. 30, Guard Lock.
72.1	Milan Highway bridge.
72.1	C. R. I. & P. Railway bridge.
73.2	Lock No. 31, lift 6 feet.
75.0	Lock No. 32, lift 12 feet.
75.1	End of Canal and entrance to Mississippi River at Rock Island.

APPENDIX A

TOLLS AND LOCKAGE CHARGES ON ILLINOIS AND MICHIGAN CANAL AND LOCKAGE CHARGES AT HENRY AND COPPERAS CREEK LOCKS ON ILLINOIS RIVER AS ESTABLISHED BY THE STATE OF ILLINOIS.

ON ILLINOIS AND MICHIGAN CANAL

Registration.—Boats entering the canal for the first time are required to pay a registration fee based on the length of the boat:

Length not exceeding 20 ft	$1.50
Length over 20 ft. and not exceeding 40 ft	2.50
Length over 40 ft. and not exceeding 60 ft	5.00
Length over 60 ft	10.00

This registration covers the existence of the boat unless its name is changed, and may then be continued by payment of $1.00 for such change.

Tolls.—Toll for boats without cargo is at the rate of three (3) cents per mile of travel in the canal.

Toll for passengers, each round trip of 25 miles or less, two and a half (2½) cents each.

Toll for cargo is based on weight, number or measure of various articles as shown in the table following.

Lockage.—The above described tolls cover lockage charges on the canal.

At Henry and Copperas Creek Locks, Illinois River

Lockage.—Boats not exceeding 150 tons measurement, $1.50; exceeding 150 tons measurement, at the rate of one cent per ton.

Boats in fleets of two or more, engaged in regular traffic and requiring only one lockage, may divide the single lockage charge among the boats, by ton measurement or otherwise.

Passengers—five (5) cents each.

Cabin boats in tow of power boats—25 cents each.

Fuel boats in tow of power boats—50 cents each.

Row boats in tow of power boats—10 cents each.

Lockage charge for cargo is based on weight, number or measure of various articles as shown in the table following.

The above described charges are made at each lock.

Lockage.—At the rate of one cent per ton, with minimum charge of $1.50.

CARGO CHARGES

Articles of Cargo and Units Thereof				Ill. & Mich. Canal Toll in Mills per mile	Henry & Copperas Creek Locks Lockage in Cents per unit
Barbed wire	each	1000	pounds	¾	3
Bark, tanners'	"	"	"	1	1½
Barley	"	"	"	¾	1½
Barrels, empty	"	"	"	2	3
Beans	"	"	"	1	3
Bran	"	"	"	1	3
Buckwheat	"	"	"	¾	1½
Charcoal	"	"	"	1	3
Clay	"	"	"	¾	3
Coal	each	ton		½	3
Coke	each	1000	pounds	¼	3
Corn	"	"	"	1	3
Drainage pipe	"	"	"	1	3
Flour	"	"	"	1	3
Furniture, household	"	"	"	2	3
Hay and fodder	"	"	"	1	3
Hemp	"	"	"	1	3
Hoops, and material for	"	"	"	1	3

CARGO CHARGES—Continued

					Ill. & Mich. Canal Toll in Mills per mile	Henry & Copperas Creek Locks Lockage in Cents per unit
Hub, boat knees and bolts	"	"	"		1	3
Ice	"	"	"		2	1½
Iron, pig, scrap and railroad	"	"	"		¾	2
Iron, wrought and cast	"	"	"		1	3
Iron ore	"	"	"		½	2
Land plaster, bone-dust and super-phosphate	"	"	"		1	1
Lead, pipe, sheets and roll, pigs and bars	"	"	"		1	3
Lime, common	"	"	"		1	2
Lime, hydraulic	"	"	"		1	2
Machinery	"	"	"		2	3
Meal	"	"	"		1	3
Merchandise (including hardware, dry goods, cutlery, groceries, crockery and other articles not specified)	"	"	"		1	3
Oats	"	"	"		¾	1½
Rye	"	"	"		¾	1½
Salt in sacks and barrels	"	"	"		1	2
Sand and other earth	"	"	"		½	1
Seeds	"	"	"		1	3
Ship stuff	"	"	"		1	3
Shorts and screenings	"	"	"		1	3
Staves and headings	"	"	"		1	3
Wheat	"	"	"		¾	1½
Zinc spelter	"	"	"		1	3
Lumber	each 1,000 ft. b.m.				5	5
Dressed flooring	"	"	"	"	4	5
Siding	"	"	"	"	2	2½
Lath	each 1000 pieces				1	1¼
Shingles	"	"	"		½	1
Brick	"	"	"		2	5
Posts, split not over 5 inches diameter	"	"	"		4	5
Fence rails	"	"	"		4	5
Railroad ties	"	500	"		20	8
Wood or fuel	each cord				10	8
Stone, dressed or sawed	each cu. yd. (27 cu. ft.)				8	15
" rubble	"	"	"		5	10
" dimension	"	"	"		8	15
" macadam	"	"	"		2	9

Notes: On wood transported more than 25 miles, the toll shall not exceed 25 cents per cord.

On stone transported more than 25 miles, the toll shall not exceed 12½ cents per cubic yard for rubble and macadam, or 25 cents per cubic yard for dressed, sawed or dimension stone.

On lumber cleared to one destination, 100,000 feet board measure shall be considered as a full canal-boat load, and all over that shall be free of toll.

Boats entering the canal at LaSalle and leaving it before reaching Ottawa shall be charged one dollar ($1.00) each if the toll on boat and cargo should not reach that amount.

For use of Lock No. 5 at Joliet in passage either way between Drainage Canal and Joliet only, a charge of fifty (50) cents shall be made.

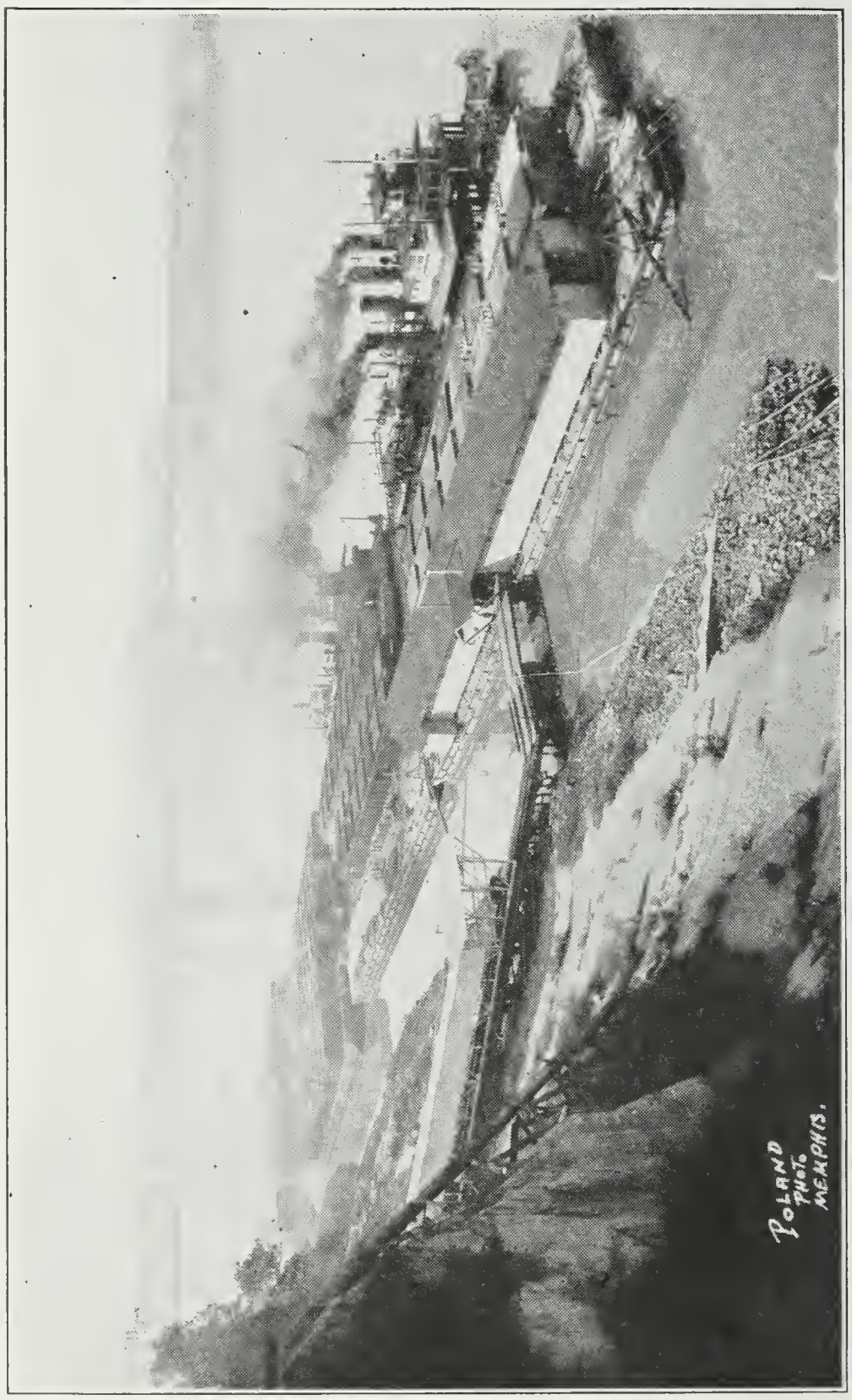
Weight for computation of toll shall include that of the container in addition to that of the article.

Duplicate bills of lading are required in all cases, one to be deposited with the collector to whom payment is made.

On clearances either way between Chicago and Copperas Creek, the lockage on boat and cargo shall be one-half the above rate at each lock, provided the cargo is not transferred before reaching destination as cleared.

Boats passing both locks on Illinois River shall be charged one-half the above rate of lockage at each lock on cargo, but the full rate on boat.

Efficient Waterfront facilities which are among the Terminal assets of St. Louis. (Courtesy Chicago Assn. of Commerce.)



Barges and Municipal River and Railroad Terminals at Memphis. (Courtesy Chicago Assn. of Commerce.)

APPENDIX B

REGULATION OF MOTOR BOATS

DEPARTMENT OF COMMERCE AND LABOR,
OFFICE OF THE SECRETARY
WASHINGTON

Department Circular No. 236

ELEVENTH EDITION

BUREAU OF NAVIGATION AND STEAMBOAT INSPECTION SERVICE

June 1, 1927

To collectors of customs, supervising and local inspectors, Steamboat Inspection Service, and others concerned:

Your attention is invited to the following act of Congress, approved June 9, 1910:

AN ACT *to amend laws for preventing collisions of vessels and to regulate equipment of certain motor boats on the navigable waters of the United States*

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled: That the words "motor boat" where used in this Act shall include every vessel propelled by machinery and not more than sixty-five feet in length except tug boats and tow boats propelled by steam. The length shall be measured from end to end over the deck, excluding sheer: *Provided*, That the engine, boiler, or other operating machinery shall be subject to inspection by the local inspectors of steam vessels, and to their approval of the design thereof, on all said motor boats, which are more than forty feet in length, and which are propelled by machinery driven by steam.

SEC. 2. That motor boats subject to the provisions of this Act shall be divided into classes as follows:

Class 1. Less than 26 feet in length.

Class 2. Twenty-six feet or over and less than 40 feet in length.

Class 3. Forty feet or over and not more than 65 feet in length.

SEC. 3. That every motor boat in all weathers from sunset to sunrise shall carry the following lights, and during such time no other lights which may be mistaken for those prescribed shall be exhibited.

(a) Every motor boat of class 1 shall carry the following lights:

First. A white light aft to show all around the horizon.

Second. A combined lantern in the forepart of the vessel and lower than the white light aft showing green to starboard and red to port, so fixed as to throw the light from right ahead to two points abaft the beam on their respective sides.

(b) Every motor boat of classes two and three shall carry the following lights:

First. A bright white light in the fore part of the vessel as near the stem as practicable, so constructed as to show an unbroken light over an arc of the horizon of twenty points of the compass, so fixed as to throw the light ten points on each side of the vessel, namely, from right ahead to two points abaft the beam on either side. The glass or lens shall be of not less than the following dimensions:

Class 2. Nineteen square inches.

Class 3. Thirty-one square inches.

Second. A white light aft to show all around the horizon.

Third. On the starboard side a green light so constructed as to show an unbroken light over an arc of the horizon of ten points of the compass, so fixed as to throw the light from right ahead to two points abaft the beam on the starboard side. On the port side a red light so constructed as to

show an unbroken light over an arc of the horizon of ten points of the compass, so fixed as to throw the light from right ahead to two points abaft the beam on the port side. The glasses or lenses in the said side lights shall be of not less than the following dimensions on motor boats of—

Class 2. Sixteen square inches.

Class 3. Twenty-five square inches.

On and after July 1, 1911, all glasses or lenses prescribed by paragraph (b) of section 3 shall be fresnel or fluted. The said lights shall be fitted with inboard screens of sufficient height and so set as to prevent these lights from being seen across the bow and shall be of not less than the following dimensions on motor boats of—

Class 2. Eighteen inches long.

Class 3. Twenty-four inches long:

Provided, That motor boats as defined in this Act, when propelled by sail and machinery or under sail alone shall carry the colored lights suitably screened but not the white lights prescribed by this section.

SEC. 4. (a) Every motor boat under the provisions of this Act shall be provided with a whistle or other sound-producing mechanical appliance capable of producing a blast of two seconds or more in duration, and in the case of such boats so provided a blast of at least two seconds shall be deemed a prolonged blast within the meaning of the law.

(b) Every motor boat of class 2 or 3 shall carry an efficient foghorn.

(c) Every motor boat of class 2 or 3 shall be provided with an efficient bell, which shall be not less than eight inches across the mouth, on board of vessels of class three.

SEC. 5. That every motor boat subject to any of the provisions of this Act, and also all vessels propelled by machinery other than by steam more than 65 feet in length, shall carry either life preservers, or life belts, or buoyant cushions, or ring buoys or other device, to be prescribed by the Secretary of Commerce, sufficient to sustain afloat every person on board and so placed as to be readily accessible. All motor boats carrying passengers for hire shall carry one life preserver of the sort prescribed by the regulations of the board of supervising inspectors for every passenger carried, and no such boat while so carrying passengers for hire shall be operated or navigated except in charge of a person duly licensed for such service by the local board of inspectors. No examination shall be required as the condition of obtaining such a license, and any such license shall be revoked or suspended by the local board of inspectors for misconduct, gross negligence, recklessness in navigation, intemperance, or violation of law on the part of the holder, and if revoked, the person holding such license shall be incapable of obtaining another such license for one year from the date of revocation: *Provided*, That motor boats shall not be required to carry licensed officers except as required in this Act.

SEC. 6. That every motor boat and also every vessel propelled by machinery other than by steam, more than sixty-five feet in length, shall carry ready for immediate use the means of promptly and effectually extinguishing burning gasoline.

SEC. 7. That a fine not exceeding one hundred dollars may be imposed for any violation of this Act. The motor boat shall be liable for the said penalty and may be seized and proceeded against, by way of libel, in the district court of the United States for any district within which such vessel may be found.

SEC. 8. That the Secretary of Commerce shall make such regulations as may be necessary to secure the proper execution of this Act by collectors of customs and other officers of the Government. And the Secretary of the Department of Commerce may, upon application therefor, remit or mitigate any fine, penalty, or forfeiture relating to motor boats except for failure to observe the provisions of section six of this Act.

SEC. 9. That all laws and parts of laws only in so far as they are in conflict herewith are hereby repealed: *Provided*, That nothing in this Act shall be deemed to alter or amend acts of Congress embodying or revising international rules for preventing collisions at sea.

SEC. 10. That this Act shall take effect on and after thirty days after its approval.

REGULATIONS

1. All violations of the above act must be reported to the Department of Commerce (Bureau of Navigation) through collectors of customs regardless of mitigating circumstances, as authority to mitigate and remit the penalties under the laws mentioned is vested solely in the Secretary of Commerce.

2. The act defines the words "motor boat" (i. e., the class of vessels subject to its requirements) as including every vessel propelled by machinery and not more than 65 feet in length, except tugboats and towboats propelled by steam. The term, therefore, includes boats temporarily or permanently equipped with detachable motors, and such vessels, when so equipped, are subject to this act.

Lights

3. The lights provided for in section 3 of the act above are *running lights* for motor boats subject to the provisions of the act in lieu of the lights prescribed, respectively, by article 2 of the act approved June 7, 1897 (covering certain harbors, rivers, and inland waters of the United States); rule 3 of the act approved February 8, 1895 (covering the Great Lakes and their connecting and tributary waters); and rules 3, 5, 6, and 7 of section 4233 of the Revised Statutes (covering western rivers). The penalty for failure to carry such lights is a fine not exceeding $100.

4. The lights provided for in section 3 are not in conflict with the anchor lights, lights for pilot and fishing vessels, and other lights provided in the acts above cited.

Collectors of customs and others will observe that the penalties for violations of existing laws not in conflict with this act remain unchanged.

5. Motor boats of class 1 which do not carry the two-color combination light forward, but have the red and green side lights separated, should carry also a white bow light (in addition to the white after light which must be carried on all classes of motor boats). It is desired, however, that class 1 motor boats comply strictly with the requirements of section 3 as regards the kinds of lights to be used.

6. No penalty is incurred by motor boats for a failure to carry lights between the hours of sunrise and sunset.

7. If a motor boat, through temporary disablement of the machinery or lack of gasoline, or for any other reason, finds it necessary to proceed under sail, in whole or in part, the white lights should be extinguished and she should proceed with her colored lights only. This does not convert a motor boat into a sailboat, however, and all other motor-boat equipment should be carried.

8. The aft light should be higher and so placed as to form a range with the forward light, and should be clear of house awnings and other obstructions.

9. The law does not specify the size of lights to be carried on motor boats of class 1. Such lights should be large enough, however, to accomplish the purpose intended, and it is suggested that the illuminated portion of such lights or lenses should not be less than 3 inches in diameter.

Whistle, Foghorn and Bell

10. No size or style of whistle, foghorn, or bell (except the bell for class 3) is prescribed, provided it is available and sufficient for the use for which it is intended. The word "efficient" must be taken in its ordinary sense, considered with reference to the object intended by the provisions in which the word appears, namely, the production of certain signals.

11. A mouth whistle capable of producing a blast of two seconds or more in duration which can be heard for at least one-half a mile has been held to be in compliance with the law.

12. Foghorns can not take the place of whistles on motor boats of classes 2 and 3.

Life Preservers and Life-saving Devices on Motor Boats Not Carrying Passengers for Hire

13. Every motor boat not carrying passengers for hire must have life preservers or life belts or buoyant cushions or ring buoys or other device, which should be of types approved by the Board of Supervising Inspectors, sufficient to sustain afloat every person on board. This includes members of the crew, children, and babies. If practicable, the purchaser should consult local inspectors or other qualified persons before purchasing life-saving devices. In any event he should satisfy himself that such devices are composed of material known to be suitable for the purpose intended.

In addition the department authorizes life preservers and buoyant cushions for motor boats not carrying passengers for hire under the following conditions: Each life preserver or buoyant cushion shall be capable of sustaining afloat for a continuous period of 24 hours an attached weight so arranged that whether the said weight be submerged or not there shall be a direct downward gravitation pull upon such life preserver or cushion of at least 20 pounds. If a buoyant cushion is furnished for more than one person, its capacity must be proportionately greater.

No such life preservers or buoyant cushions stuffed or filled with granulated cork or other loose granulated material and no pneumatic life preservers or cushions will be approved.

Planks, gratings, floorings, oars, corks on ropes or fish nets, empty kegs or casks, wooden boxes, small boats in tow, etc., are not approved as substitutes for life preservers, life belts, buoyant cushions, or ring buoys, but wooden life floats made of light buoyant wood may be used, the dimensions of each of which shall be not less than 4 feet in length, 12 inches in width, and 1¾ inches in thickness, and shall not exceed 25 pounds in weight. The float may be made in one or two pieces. If made in two pieces, they shall be securely attached together with wooden dowels. No metal shall be used in the construction of the float. It shall be provided with two handholes, one at each side, midway in the length, which handholes shall be cut through the float and be not less than 6 inches in length and 2 inches in width, with a margin of at least 1 inch at the edge of the float. Wooden life floats made of balsa wood properly encysted and treated may be used, which floats shall be not less than 3 feet in length, 11½ inches in width, and 2 inches in thickness. Life floats already installed on motor boats and constructed in accordance with previous regulations may continue to be used.

Samples of other substitutes for the articles mentioned must first be submitted to the Supervising Inspector General, Steamboat Inspection Service, for examination and approval.

On Motor Boats Carrying Passengers for Hire

Motor boats carrying passengers for hire shall carry one life preserver of the sort prescribed by the Board of Supervising Inspectors for every passenger carried, and the person in charge must be duly licensed.

Motor boats hired at launch liveries and operated by the liveryman or his employee are construed as carrying passengers for hire; but if the motor boat is operated by the hirer himself, it is not considered a carriage of passengers for hire even though he may take other persons on board, provided, of course, he does not receive compensation for carrying these other persons.

Fire-Extinguishing Apparatus

14. Fire extinguishers of a type approved by the department must be carried on all motor boats when being navigated. The following fire extinguishers, which are either of the carbon-tetrachloride or foam types, have demonstrated a capacity for extinguishing burning gasoline and are approved by the department. The name of the company for which approved and the capacity of each fire extinguisher are stated. Where the kind of fire extinguisher is not stated, it is of the carbon-tetrachloride type.

Note: The list is quite extensive and is not quoted here. Official circular should be obtained from Steamboat Inspection Service.

Salt and sand as a means of extinguishing burning gasoline are no longer approved.

Licensed Officers and Inspection

15. In lieu of the inspection of steam vessels now provided by sections 4417, 4418, and 4426, Revised Statutes, it is now required that, after due inspection or personal observation, the design of the engine, boiler, or other operating machinery of motor boats more than 40 feet in length and not more than 65 feet in length, propelled by machinery driven by steam, shall be approved by the local inspectors.

All steam vessels more than 65 feet in length are subject to inspection as heretofore.

Motor boats propelled otherwise than by steam of above 15 gross tons carrying freight or passengers for hire, but not engaged in fishing as a regular business, are subject to inspection whether under or over 65 feet in length.

The only officer required to be carried on motor boats within the contemplation of the act of June 9, 1910, is the licensed operator provided for in the act.

Documents and Name

16. All motor boats of 5 net tons or over engaged in trade must be documented; that is to say, licensed by the collectors of customs. Vessels under 5 net tons are not documented in any case. The license of the vessel obtained from the collector of customs (designated a document) is additional to and must not be confounded with the license required for the operator of a motor boat.

Documented vessels must have name and home port on stern and name on each bow. Tonnage measurement is necessary only in case of vessels requiring to be documented.

17. Motor boats are required to have on board two copies of the pilot rules to be observed by them, which will be furnished by collectors of customs and local inspectors, Steamboat Inspection Service, on request. Copies of this circular should be inserted therein.

TABULATED STATEMENT OF EQUIPMENT REQUIRED

CARRYING PASSENGERS FOR HIRE

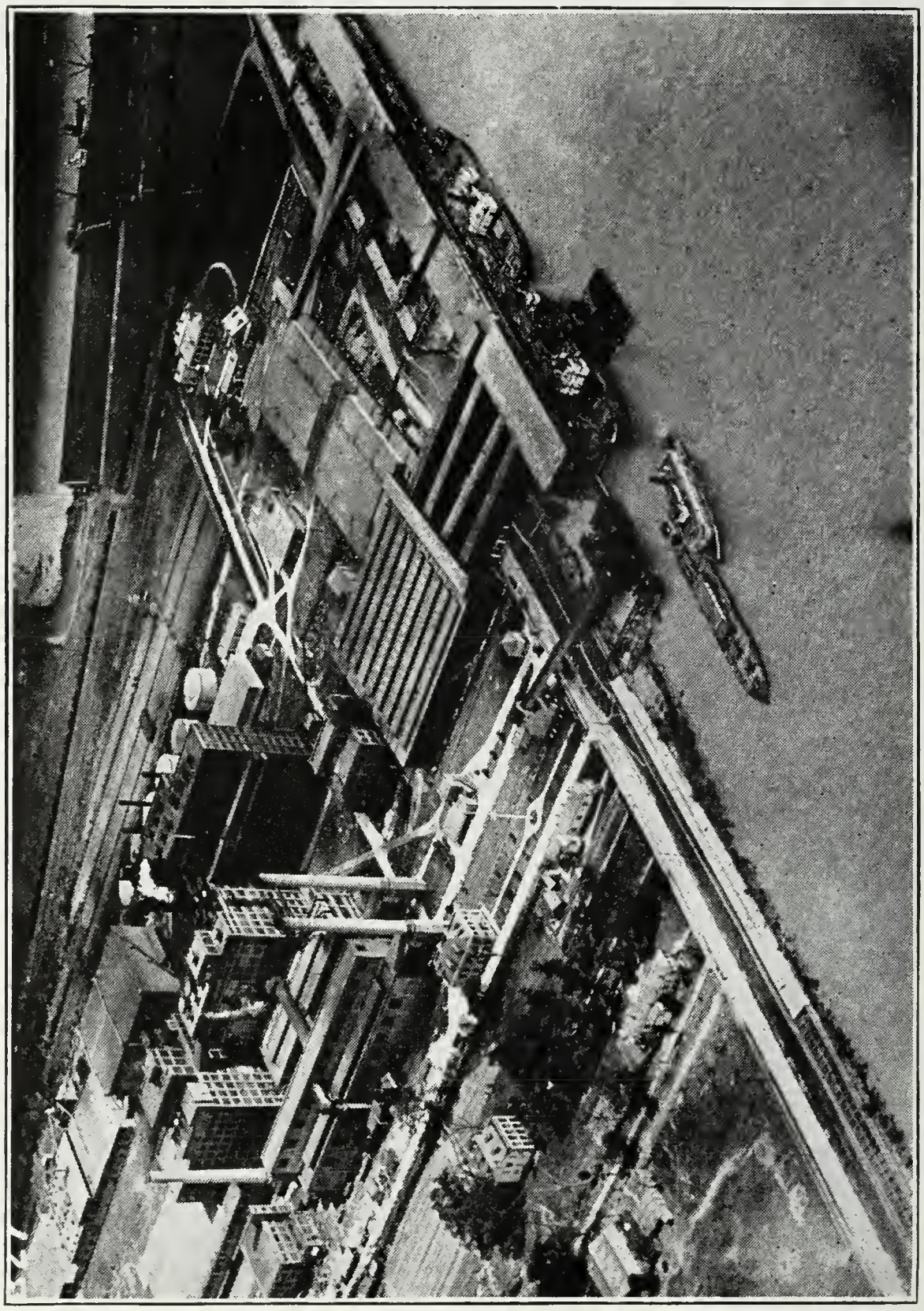
Section 3.	Section 4.	Section 5.	Section 6.
Class 1—Combination light forward. White light aft.	Whistle	Life preservers. Licensed operator.	Approved fire extinguishers.
Class 2—White lights forward and aft and colored side lights, all with fresnel or fluted lenses.	Whistle, bell and fog horn.	Same as Class 1.	Same as Class 1.
Class 3—Same as Class 2.	Same as Class 2.	Same as Class 1.	Same as Class 1.

NOT CARRYING PASSENGERS FOR HIRE

Section 3.	Section 4.	Section 5.	Section 6.
Class 1—Combination light forward. White light aft.	Whistle	Life preservers or life-saving devices prescribed by act.	Approved fire extinguishers.
Class 2—White lights forward and aft and colored side lights, all with fresnel or fluted lenses.	Whistle bell and fog horn.	Same as Class 1.	Same as Class 1.
Class 3—Same as Class 2.	Same as Class 2.	Same as Class 1.	Same as Class 1.

No equipment, except anchor lights after sunset, and customhouse numbers as required by the act of June 7, 1918 (see Department Circular No. 278), is required on motor boats when not being navigated.

S. B. Davis,
Acting Secretary of Commerce.



Waterfront Plant of American Sugar Refinery—largest in the world—at New Orleans. (Courtesy Chicago Assn. of Commerce.)

APPENDIX C

LAWS, RULES AND REGULATIONS FOR THE USE, ADMINISTRATION AND NAVIGATION OF THE ILLINOIS AND MISSISSIPPI (HENNEPIN) CANAL, 1908.

THE LAW

Extracts from Acts of Congress

The River and Harbor Act of June 13, 1902, contains the following section:

"Sec. 11. That section 4 of the River and Harbor Act of August 18, 1894, be, and is hereby amended so as to read as follows:

"Sec. 4. That it shall be the duty of the Secretary of War to prescribe such rules and regulations for the use, administration and navigation of any or all canals and similar works of navigation that now are, or that hereafter may be, owned, operated or maintained by the United States, as in his judgment the public necessity may require; and he is also authorized to prescribe regulations to govern the speed and movement of vessels and other water craft in any public navigable channel which has been improved under the authority of Congress, whenever, in his judgment, such regulations are necessary to protect such improved channels from injury, or to prevent interference with the operations of the United States in improving navigable waters or injury to any plant that may be employed in such operations. Such rules and regulations shall be posted in conspicuous and appropriate places for the information of the public; and every person and every corporation which shall violate such rules and regulations shall be deemed guilty of a misdemeanor and, on conviction thereof in any district court of the United States within whose territorial jurisdiction such offenses may have been committed, shall be punished by a fine not exceeding $500, or by imprisonment (in case of a natural person) not exceeding six months, in the discretion of the court."

REGULATIONS

1. *Works to Which These Rules Apply.*—These rules apply to the use, administration and navigation of the Illinois and Mississippi Canal lying in the counties of Whiteside, Bureau, Henry and Rock Island, in the State of Illinois. The lands acquired and owned by the United States are held for the purposes of navigation, for sites for government structures and for the accommodation and use of employees of the United States. Trespassing on said lands is strictly forbidden, and all persons are hereby expressly warned under penalty of the law:

(a) Not to cut trees, dig up and carry away earth, sand, gravel, or rock, injure or deface fences, locks, bridges, culverts, telephone lines, or any other structures belonging to the United States, or post or paint advertisements thereon, use dynamite for any purpose, erect temporary or permanent structures, or deposit refuse matter of any kind.

(b) Not to permit horses, cattle, sheep, hogs or other animals to run at large on any portion of the said lands, including those used as public highways.

(c) Not to ride or drive along or upon canal embankments, except where such embankments are intended as public highways.

(d) Not to enter upon these lands for the purpose of hunting or taking of game by any means, except with written permit from the assistant

engineer in charge of the operation of the canal; and then in strict accordance with the game laws of the State of Illinois, except that for the protection of the canal banks, hunters authorized as above and canal employees may kill or take burrowing animals at any time.

(e) Not to sell or cause to be sold upon these lands nor upon any boat while in the canal any spirituous or malt liquors.

(f) Not to fish within 100 feet of any fishway or lock, nor to take fish from any fishway, and not to fish with nets of any kind within canal grounds.

*(g) Not to run traction engines over the bridges across the canal without either laying plank on which to run or removing the anti-skidding device from the front wheels and the lugs from the rear wheels; the plank provided by the United States for the above purpose must be replaced by traction-engine crew on the railings of bridges after using same.

2. *Controlling Authority.*—The movements of all floating craft within the canal itself or at or near any entrance to the canal, and the movement of traffic over movable bridges shall be under the direction of the canal authorities.

3. *Boat Signals.*—Pilots or masters in charge of boats, on coming within a half mile of a movable bridge or lock, shall signal for passage by one whistle of ten seconds duration: *Provided,* that if the boat lands within this limit the signal shall be given when it is leaving the landing. Boats must be brought to a full stop two hundred feet from each movable bridge or lock, and not brought nearer until signaled to do so. Pilots and vessels while in the canal will be subject to all the rules and regulations of the United States relating to pilots and vessels on western rivers.

4. *Railway Signals.*—During the season of navigation the passage of trains over the movable railroad bridge shall be directed by the interlocking system, and no one shall pass a train over said bridge, except as directed by such signals. Trains must not be made to pass home signals when the same are set against their passage, or to stand on the derailing device while waiting for the bridge to close.

5. *Highway Signals.*—Before a movable highway bridge is opened, the highway shall be closed by a wooden bar at each end of the bridge. When the bridge is opened at night a white light shall be displayed on the wooden bars. Street cars and teams must not be driven on the bridge after the bar has been placed across the highway at either end of the bridge until the bar has been removed by the bridge tender.

6. *Precedence at Locks.*—The order of passage of boats through a lock shall be determined by the lock tender, who will see that the spirit of the rules generally stated, is carried out with reasonableness and fairness to all. No boat or tow shall be made to obstruct the passage through a lock, or the approaches thereto, nor shall any boat be made to enter a lock before another of the same class arriving before it from the same direction. When several boats await lockage the upbound and downbound vessels shall be made to alternate in the order established by the lock tender. Among boats of the same class ready for passage at the same time, the first to arrive shall be given priority in entering the lock. Among boats of different classes the order shall be as follows—Boats bound upstream alternating with those bound downstream.

(1) United States boats, (2) boats carrying United States mail, (3) steam and motor passenger boats, (4) tow boats and tows, (5) unregistered barges, or boats without motive power other than sail or animal.

Provided, that when it is necessary to break up tows, the parts of tows requiring separate lockages shall be considered separate boats, and shall take their turns in accordance with above order of precedence.

Boats that fail to enter a lock with reasonable promptness, after being authorized to do so, shall lose their turns.

Small pleasure boats, skiffs, fishing boats, and other small craft, will be locked through morning at one lockage and evening at one lockage, and, as a rule, separate lockages at other times for such craft will not be made,

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*Added August 30, 1913. Revised September 30, 1915.

but such craft will be locked through at other times with large boats, and will take advantages of suitable opportunities without notice from lock tenders.

7. *Passage of Movable Bridges.*—Regular scheduled trains have prior right-of-way over the railway bridges as against boats passing along the canal. When two or more boats meet in the vicinity of a swing bridge, each must be so maneuvered as to pass through the opening on its right. No attempt shall be made to pass a boat through a movable bridge until the bridge is fully opened.

Boats moving in the canal shall have precedence over street railway cars, teams and vehicles.

8. *Mooring in Locks.*—All boats when in locks shall be moored by bow and stern lines to the snubbing posts provided for that purpose. Boats must not enter or leave the locks until the lock gates are fully in the gate recesses, and the lock tender has given the proper order.

9. *Injury to Walls and Fixtures.*—The owners and masters of boats shall be held responsible for the cost of repairs of injuries to locks or other structures due to carelessness in handling their craft. They must use great care not to strike any part of the lock or sluice walls, or any gate or appurtenance thereto, or machinery for operating the gates, or the walls protecting the banks of the canal.

All boats using canal must be free from projecting irons or rough surfaces that would be liable to damage the locks or any part of the canal, and they must be provided with suitable fenders to be used in guarding the lock walls, etc., from injury. Lock tenders shall notify owners or masters of boats of projecting irons or other parts of their boats liable to do damage to the structures, and after an interval of one week from date of such notice, the engineer in charge may refuse to permit such boats to use the canal until the required changes have been made.

Boats must not be moored to telephone poles, shade trees, fences, or any of the structures of the canal, but must be moored by bow and stern to the snubbing posts, provided for that purpose or otherwise.

10. *Handling Gates and Bridges.*—No person, unless authorized by the lock or bridge tender, shall open or close any bridge, gate, valve, or in any way interfere with the employees in the discharge of their duties; but the lock tender may call for assistance from the master of any boat using the lock, should such aid be necessary, and when rendering such assistance, the men so employed shall be strictly under the orders of the lock tender. Masters of boats refusing to give such assistance when it is required of them may be denied the use of the canal by the engineer in charge.

11. *Speed in the Canal.*—No boat while in the canal shall be raced with, or crowded alongside of another, or moved at a greater rate of speed than six miles per hour.

12. *Meeting or Passing in the Canal.*—Boats moving at a rate less than six miles per hour must slacken speed and permit a boat moving in the same direction at a higher rate to pass. Steam and motor boats meeting in the canal will ordinarily pass to the starboard. Steam and motor boats meeting or passing boats towed by team or men must pass on the side opposite the towpath. Where boats being towed by teams or men meet in the canal, the upbound boat shall take the towpath side. The towpath is on the south side of the canal from Lock No. 1, to Lock No. 22, and on the north side of the canal from Lock No. 22, to Lock No. 29. The towpath on the feeder is on the west side.

13. *Permissible Dimensions of Boats.*—The lock chamber are 35 feet wide and 170 feet long. Boats less than 35 feet wide and less than 150 feet long can pass through the locks. The standard depth of water is 7 feet. A boat must not attempt to leave or enter a lock when its draft is greater than the depth of the water on the miter sills, as shown by the gauges at that time.

The clearance under the bridges at standard stage of water is 17 feet on the main line and 12 feet on the feeder. There are movable bridges at Locks Nos. 2, 21, 22, 26 and 31, and at Milan, Illinois. Boats must not

attempt to pass these bridges until signaled to do so. Levels will not be lowered to accommodate boats higher than the above standard clearances.

Telegraph and telephone wires or other wires or ropes of any kind crossing the canal must be at least 27 feet above standard stage of water on main lines, and at least 22 feet above standard stage on feeder. Wires crossing the canal at or near Milan, Illinois, must be high enough to allow the highest steamboats to pass.

14. *Refuse in the Canal.*—No ashes, cinders, slag, refuse or obstructive matter of any kind shall be dumped, cast out or unloaded in the canal or locks or approaches to locks. Ashes, cinders and other like materials from boats must be deposited on the towpath or transported entirely out of the canal. Refuse or offensive material of any kind must not be deposited on the canal grounds.

15. *Delays in Canal.*—No boat, barge, raft or other floating craft, shall be tied up in, or in any way obstruct the canal or its approaches, or delay entering or leaving the locks. Permission to tie up boats for some hours or days in the canal shall only be given by the officer in charge or his authorized representative, and boats so using the canal must be securely moored by bow and stern in places assigned them and be promptly removed on due notice.

16. *Rafts.*—The passage of "bag" or "sack" rafts, or loose logs or lumber into or through the canal is prohibited.

17. *Use of Canal as Winter Harbor.*—Boats, barges and other floating craft may use the canal as winter harbor at such points as authorized by the officer in charge, or his representatives. Owners of craft thus afforded a harbor must assume all risks of damage. Boats and other craft must be securely moored by bow and stern at indicated points and must be removed in the spring.

18. *Cutting Ice.*—Permits to cut ice will be sold at a uniform rate of $1 per 1,000 square feet of surface. Application for permits should be made to nearest canal official.

19. Annulled. June 10, 1920.

20. *Definition of Trespassers.*—All persons not employed by the United States about the canal, or not at the time necessarily present by reason of their engagement in commerce by water, or not passengers temporarily landed from boats while passing through the canal, found upon the grounds and works, without permission, will be deemed trespassers thereon: *Provided*, that, without permission, boats shall not land excursions or picnic parties on United States lands or works and that if such parties be so landed, they shall be held and deemed to be trespassers.

Lounging, visiting, or remaining in or about any office, house yard, shop, shed, lock, bridge, dam or other structure belonging to the canal is forbidden.

21. *Persistent Violations of Regulations.*—If the owner or master of any boat persistently violates these regulations after due notice of the same, the boat may be removed from the canal and thereafter refused passage through the locks by the officer in charge.

22. *Statistical Information.*—In accordance with the Act of Congress of February 21, 1891, upon each passage through the canal or upon each trip in the canal, if it is not entirely traversed, the masters or clerks of vessels or boats shall furnish in writing a detailed statement of cargo and passengers carried, using blank forms furnished by the United States.

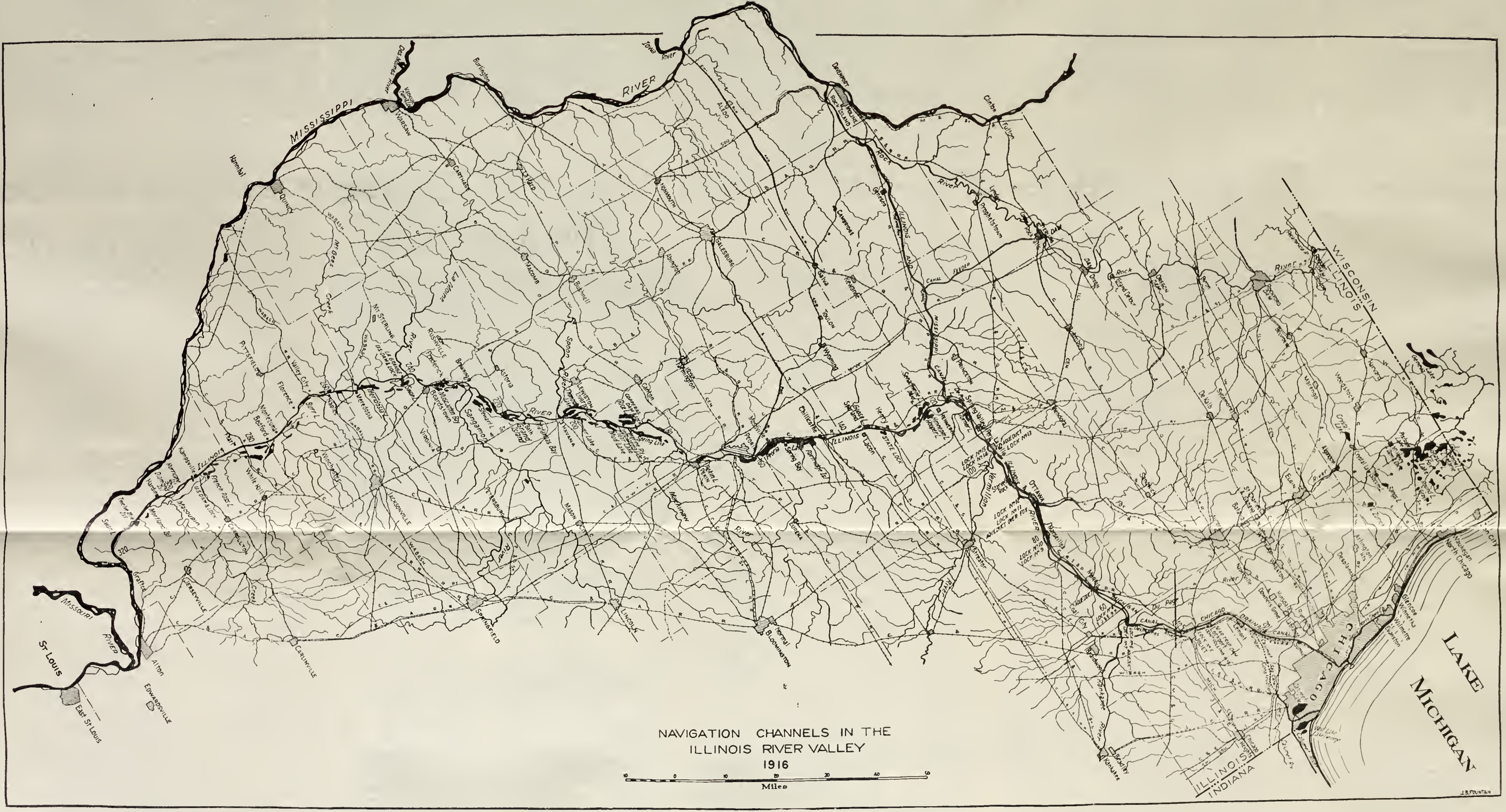
This statement shall be handed to the lock tender at first lock passed. In case no lock is passed, the statement shall be mailed to the office of the United States Assistant Engineer in charge of the operation of the canal at Sterling, Illinois.

Failure to furnish this statement will cause the offending boat to be refused passage through the canal or any part of it.

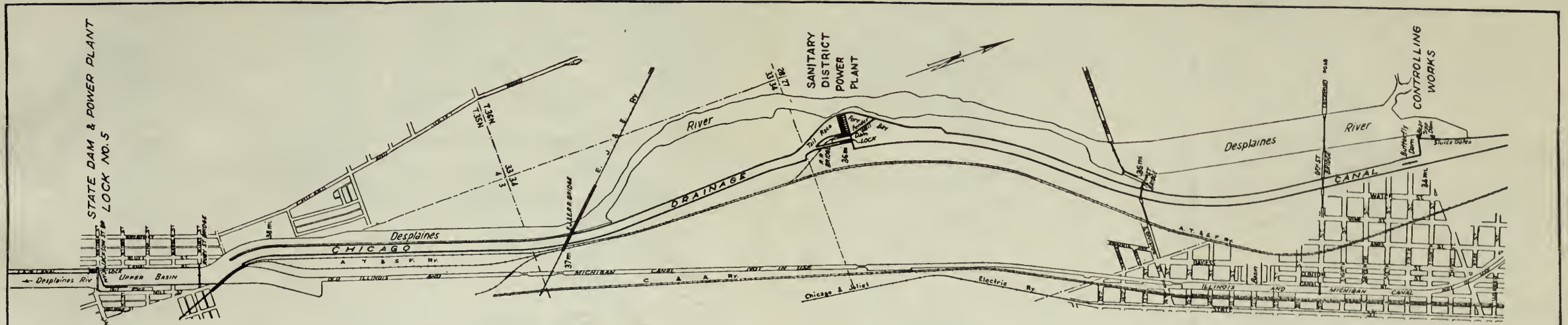
23. These rules and regulations shall supersede all those previously made for this canal, or for any part of it, and shall be in force from and after April 15, 1908.

ROBERT SHAW OLIVER,
Acting Secretary of War.

Approved April 8, 1908.



State of Illinois
DEPARTMENT OF PURCHASES AND CONSTRUCTION
Division of Waterways.



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